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PATENT ABSTRACTS OF JAPAN

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(54) PRODUCTION OF SLIDING PARTS OF ALUMINUM OR ALUMINUM ALLOY

(57) Abstract:

PURPOSE: To inexpensively and speedily produce a sliding member having excellent wear resistance and high long-term reliability by subjecting the sliding part of Al or Al alloy to a rapid melting and rapid resolidifying treatment with a high density energy and providing numerous pores on the surface layer.

CONSTITUTION: The sliding part of the Al alloy 6 of an Al-Si system, etc., where the above-mentioned Al alloys slide with each other or the Al alloy and cast iron, etc., slide each other is irradiated with a laser 8 of high density energy and is thereby subjected to the rapid melting and rapid resolidifying treatment. A surface layer 7 provided with

numerous pores is formed on the surface layer of the above-mentioned Al alloy 6 in this way. The foregoing formation of Ni plating on the surface of the above-mentioned Al alloy 6 and the formation of the corrosion resistant Ni-Al alloy layer in the hole parts by the laser 8 are possible as well. The treating of the surface 7 is thereafter finished by machining or grinding to expose the pores. The lubricating condition of the sliding part is improved in this way, by which the breakage of oil films is prevented and the seizure resistance is improved; in addition, the hard alloy is formed on the surface and the wear resistance is thereby improved.